REMARKS/ARGUMENTS

Claims 1-20 have been resubmitted. Claims 1, 6, 10, 11, 16, 17, 18 and 19 have been amended. New claim 21 has been submitted.

In the Office Action, the Examiner indicated that the references listed in the specification were not properly disclosed in an information disclosure statement. The disclosure was objected to because of a typographical error in page 33. Claim 16 has been objected to for lack of coherence. Claims 6, 8, 10, 13-14 and 16 were rejected under 35 U.S.C. 102(a) as being anticipated by Damiani et al. Claims 1-5, 7, 9, 11-12, 15 and 17-20 were rejected under 35 U.S.C. 103(a) as being unpatentable over Damiani in view of Murata.

Information Disclosure Statement

Applicants have submitted a supplemental Information Disclosure Statement herewith including references mentioned in the specification.

Objection to Specification

Applicants have amended the specification as suggested by the Examiner. Accordingly, withdrawal of this objection is requested.

Claim Objections

Claim 16 was objected to for not being coherent. Claim 16 has now been amended to overcome this deficiency. Applicants respectfully request the withdrawal of this objection.

Rejections under 35 U.S.C. 102(a)

Claims 6, 8, 10, 13-14 and 16 were rejected under 35 U.S.C. 102(a) as being anticipated by Damiani.

The Damiani Reference

The Examiner has cited the article entitled "A Fine-grained Access Control System for XML Documents", dated May 2002, (hereinafter "Damiani") in rejecting the claims.

Damiani, at page 169, discusses two categories of access control systems for XML documents. In describing the first category Damiani states:

> "However, these approaches typically operate at the
> file-system level, <u>independently of the data that
> have to be protected from unauthorized accesses</u>."
> (see Damiani at p. 169, emphasis added)

Damiani then proceeds to discuss problems with this approach.

The second category of access control system is the kind advocated and disclosed by Damiani in the rest of the paper. It is described as:

> "We present an access control model to protect
> information distributed on the Web that, by exploiting
> XML's own capabilities, allows <u>the definition and
> enforcement of access restrictions directly on the
> structure and content of the documents</u>." (See Damiani
> at p. 169, emphasis added)

The fact that the Damiani system operates on the structure and contents of the documents to be accessed is further illustrated by Figure 11 in Damiani, which clearly shows that the XML document (for which access is requested) is accessed and parsed. "Parsing" is the first of the three main steps in the Damiani system, the other two steps being "compute view" and "unparsing" as described on page 198-199 of Damiani. In particular, on page 198 Damiani states:

> "The parsing step consists of the syntax check of the
> requested document... ."

The result of the parsing is an object-oriented document graph which is used in the next two steps to make the access determination in response to a request.

Thus, it is clear that Damiani teaches an access control system that accesses the documents for which access is requested. Damiani performs an analysis by checking the structure of the XML document to be accessed. Damiani teaches away from the first type of access control system discussed above, which operates at the file-system level, independent of the data that is being protected.

Applicants' invention is clearly of the first type. It operates independently of the data that is being protected. In particular, Applicants' invention performs a preliminary access decision prior to an actual analysis being performed by checking a structure of an XML document. It does this by analyzing a path expression (extracted from a received query) in which a retrieval condition is described using an access control policy indicting an access condition. (See Applicants' specification at page 9, lines 10-24).

The access analysis performed by Applicants' invention is considered preliminary for the following reason. In cases where this analysis yields a decision in which the retrieval condition is always permitted or always denied, the access analysis is complete. However, there is also the possibility that the analysis indicates that the propriety of the access is indeterminate. In this case, a conventional access analysis must be performed by checking the structure of the XML document to be accessed. (See Applicants' specification at page 26, lines 6-16).

An important advantage of applicants' invention is that the speed of the access decision process is increased because at least in those cases where a yes or no decision can be made, the time consuming process of retrieving the XML document is avoided. Only where the preliminary decision is indeterminate must the XML document be retrieved. In prior systems such as Damiani, retrieval of the XML document was needed in each case, resulting in slower performance.

Regarding claim 6, applicants have amended this claim to include the phrase "said selecting, applying and deciding being performed prior to retrieving said structured document in said database". Similarly, independent claim 10 has been amended to include the phrase "said preliminary access rights analysis device deciding said access rights without retrieving said XML document". Support for these amendments is found in Applicants' specification at page 9, lines 10-24. Independent claim 16 already included a similar limitation, "applying an access control policy describing access control rules and, without checking the data file stored in the database, deciding an access right ...". As discussed above, Damiani teaches that the document for which access is requested must be accessed in order to make a decision regarding

whether to permit access by a requestor. Hence, Applicants respectfully submit that Damiani does not anticipate independent claims 6, 10 or 16.

Furthermore, claim 10 has been amended to include the limitation that the access rights analysis device is a "preliminary" access rights analysis device. As discussed above, there is a preliminary aspect to Applicants' invention because, if the decision is not "permitted" or "denied", then it is "indeterminate". In the case of an "indeterminate" decision the XML document will need to be retrieved, and an actual analysis of the structure of the XML document will need to be performed to determine access rights (See Applicants' specification at page 9 lines 10-24).

Claim 10 also states that the access rights decision "is one of 1) always permitted, 2) always denied, and 3) indeterminate...". There is no teaching in Damiani of these three possible decisions. There is also no teaching in this reference that the decision is a preliminary one. In fact, Damiani does not teach that an indeterminate decision is possible nor how such an occurrence would be handled.

Applicants have submitted new claim 21, dependent on claim 10, which addresses this feature of what happens in the event of an indeterminate decision, namely, the XML document is retrieved. This feature, which addresses the response to a preliminary decision of indeterminate, is not taught or suggested by Damiani. For at least these reasons, Applicants submit that claim 10 and new claim 21 are not anticipated by Damiani.

In rejecting claim 16, Applicants note that the Examiner has not included any discussion of the limitation "applying an access control policy describing access control rules and, without checking the data file stored in the database,

deciding an access right … ". Hence, since Damiani does not include the teaching of deciding access rights without accessing the requested file, and since the Examiner has not even asserted that Damiani includes this particular limitation, Applicants respectfully submit that claim 16 is not anticipated by Damiani.

Claims 8, 13 and 14 are dependent on at least one of claims 6, 10 and 16 and should be allowable for the reasons discussed above in connection with the independent claims. For at least these reasons, Applicants respectfully request reconsideration and withdrawal of the rejection of dependant claims 8, 13 and 14 as being anticipated by Damiani.

Rejections under 35 U.S.C. 103(a)

Claims 1-5, 7, 9, 11-12, 15 and 17-20 were rejected under 35 U.S.C. 103(a) as being unpatentable over Damiani in view of Murata (Article entitled "Extended Path Expressions for XML", hereinafter "Murata").

Regarding claim 1, Applicants note that claim 1 has been amended to state that the logic operation unit for deciding access rights does so "without accessing said data file stored in said database". Support for this amendment is found in Applicants' specification at page 9, lines 10-24. As discussed above, the Damiani reference does not teach, and in fact teaches away from, deciding access rights without accessing the data file which is being accessed.

Nor does the cited Murata reference disclose or suggest the above-discussed claim limitations. In particular, Murata proposes an extension of underlying alphabets which represent conditions on nodes in XML documents. Murata does not teach or suggest that its teachings may be applied to the field

of access control systems. More particularly, Murata does not teach that a decision regarding access rights to a data file in a database be made without accessing the data file. Hence, claim 1 is not rendered obvious by Damiani in view of Murata.

Claims 7 and 9 are dependent on the above-discussed claim 6 and claims 11-12 are dependent on the above-discussed claim 10. Since Murata does not teach or suggest that a decision regarding access rights to a data file be made without accessing the data file, it does not teach or suggest the invention recited in claims 6 and 10. For at least these reasons, claims 7, 9, and 11-12 are not rendered obvious by Damiani in view of Murata.

Claim 15 as originally submitted includes the phrase "deciding an access right in database retrieval using the path expression without checking the XML documents stored in the database". As discussed above, neither Damiani nor Murata teaches or suggests this limitation. In rejecting claim 15, Applicants note that the Examiner has not included any discussion of the limitation "deciding an access right in database retrieval using the path expression without checking the XML documents stored in the database." Since neither Damiani nor Murata includes the teaching of deciding access rights without checking the requested file, and since the Examiner has not even asserted that this particular limitation is found in the prior art, Applicants respectfully submit that claim 15 is not rendered obvious by these references.

Claims 17 and 19 have also been amended to include the limitation that the access rights are decided "without retrieving said XML document." Support for this amendment is found in Applicants' specification at page 9, lines 10-24. As discussed above, neither Damiani nor Murata discloses or suggests this feature.

Claims 2-5, 11-12, 18 and 20 are dependant on independent claims discussed above and should be allowable for the reasons discussed above in connection with the independent claims.

Since neither Damiani nor Murata teaches or suggests the above-described claim limitations, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 1-5, 7, 9, 11-12, 15 and 17-20 as being unpatentable over Damiani in view of Murata.

CONCLUSION

Reconsideration and withdrawal of the rejections with respect to claims 1-20 is requested. Applicants submit that the claims are now in condition for allowance.

In the event the Examiner wishes to discuss any aspect of this response, please contact the attorney at the telephone number identified below.

The Commissioner is hereby authorized to charge payment of any fees associated with this communication or credit any overpayment to Deposit Account No. 090441.

Respectfully submitted,

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